

2007-08 Idaho 8th Grade Direct Mathematics Assessment**828**

MR

STUDENTS DO NOT WRITE IN THIS AREA**FINAL****ROUND 1****ROUND 2**

T: _____ R: _____

T: _____ R: _____

Explain how you solved the problems on this page.**If you use a calculator, show how you set up the math.**

- 1) Michelle wants to buy a CD player at Marty's Electronics for \$87.00, a case for \$14.50, batteries, and 4 CD's for \$11.00 each.

- a) How much will it cost Michelle to buy what she wants at Marty's Electronics, including a 6% sales tax? *Show or explain how you found your answer.*

$$\begin{array}{r}
 87.00 \\
 14.50 \\
 4.50 \\
 + 44.00 \\
 \hline
 150.00
 \end{array}$$

$$\begin{array}{r}
 150 \\
 \times 1.06 \\
 \hline
 9.00
 \end{array}$$

$$\begin{array}{r}
 150 \\
 + 9 \\
 \hline
 \boxed{\$159.00}
 \end{array}$$

- b) If Michelle saves \$7.50 a week, how many weeks will it take her to have enough money to buy everything she wants? *Show or explain how you found your answer.*

$$\begin{array}{r}
 21.2 \\
 7.50 \overline{)159} = \boxed{22 \text{ weeks}}
 \end{array}$$

- c) Michelle receives \$30.00 for her birthday. This is what fraction of the total cost? *Show or explain how you found your answer.*

$$\frac{30}{159} = \boxed{\frac{10}{53}}$$

- d) Michelle has a coupon for 15% off her purchases. With this discount, what would her CD player, case, batteries, and 4 CD's cost before sales tax? *Show or explain how you found your answer.*

$$\begin{array}{r}
 150 \\
 \times 1.15 \\
 \hline
 1750 \\
 + 1500 \\
 \hline
 2250
 \end{array}$$

$$\begin{array}{r}
 49 \\
 150.00 \\
 - 22.50 \\
 \hline
 127.50
 \end{array}$$

$$\boxed{\$127.50}$$

Appropriate
processes,
accurately
completed.

Read problems 2, 3, 4, and 5 on this and the next two pages.
 Select three problems to answer. Answer ALL of the parts of the three problems you select to answer.
 Cross out the one problem that you do not choose to answer.

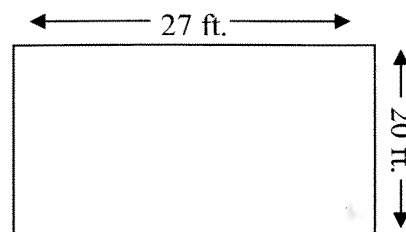
- 2) Sarah has a garden that is 27 ft. long and 20 ft. wide.

- a) What is the perimeter of the garden?

Show or explain how you found your answer.

$$\begin{array}{r} 27 \\ 27 \\ 20 \\ + 20 \\ \hline 94 \text{ ft.} \end{array}$$

94 feet



- b) What is the area of the garden?

Show or explain how you found your answer.

$$\begin{array}{r} 27 \\ \times 20 \\ \hline 00 \\ + 540 \\ \hline 540 \end{array}$$

540 ft²

Advanced communication.

- c) Sarah wants to place a block border around the outside edges of her garden. If each block is 6 in. by 6 in., how many blocks will she need to complete the border? Show or explain how you found your answer.

$$\begin{array}{r} 27 \\ \times 2 \\ \hline 54 \end{array} + 54 = 108$$

$$\begin{array}{r} 108 \\ + 80 \\ + 4 \\ \hline 192 \end{array}$$

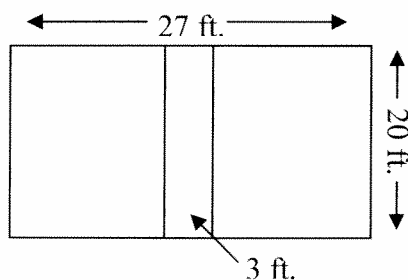
192 blocks

$$\begin{array}{r} 20 \\ \times 2 \\ \hline 40 \end{array} + 40 = 80$$

for each corner = 4

Effective problem-solving.

- d) Sarah would also like to use the same size blocks to place a path down the center of the garden. The path will be 3 ft. wide. How many total blocks will she need for the border and the path? Show or explain how you found your answer.



$$192 + 120 = 312 \text{ total}$$

$$\begin{array}{r} 3 \times 20 = 60 \\ \times 2 \\ \hline 120 \end{array}$$

Minimal or non-existent errors.

- 3) The following table shows scores for students in Mr. Holverson's math class.

Students Test Scores

| Name | Test 1 | Test 2 | Test 3 | Test 4 |
|---------|--------|--------|--------|--------|
| Joe | 87 | 82 | 90 | 96 |
| Su-ling | 94 | 89 | 90 | 78 |
| Donna | 62 | 74 | 95 | 92 |
| Blake | 87 | 79 | 85 | 88 |
| Carlos | 78 | 79 | 85 | 84 |

- a) Find the **mean** (average), **median**, and **mode** for Test 3. Show or explain how you found your answers.

Handwritten work for Test 3 statistics:

mean: $355 \div 5 = 71$
 $90 + 90 + 95 + 85 + 85 = 355$
mean = 71%

median: $85 - 85 - 90 - 90 - 95$
median = 90%

mode: $85 - 90 - 95$
mod = 85 and 90

- b) What is the mean of Joe's four test scores? Show or explain how you found your answer.

Handwritten work for Joe's mean:

$87 + 82 + 90 + 96 = 355$
 $355 \div 4 = 88.75$ or **89**

- c) If a fifth test is given, what score must Joe get to have an overall average of at least 90? Show or explain how you found your answer.

Handwritten work for Joe's fifth test score:

$87 + 82 + 90 + 96 = 355$
 $90 \times 5 = 450$
 $450 - 355 = 95$
95%

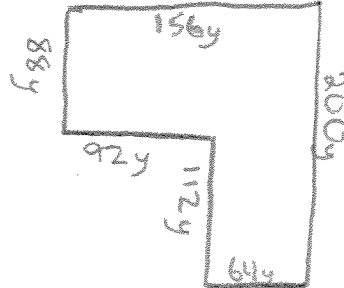
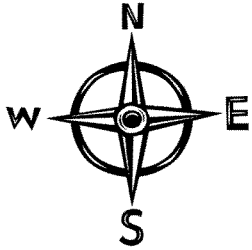
Advanced understanding of situation.

- d) Which test was the easiest for the class? How do you know? Show or explain how you found your answers.

Test #3 because they all got "A"s and "B"s.

- 4) Simon and his sister wanted to see how long it would take to walk all the way around the department store parking lot near their home. Starting in one corner of the lot, they walked east for 156 yards. They turned south and walked for 200 yards, then walked 64 yards west. Next they went 112 yards north, 92 yards west, and 88 yards north.

a) Draw a diagram of the path they traveled and label all the distances.



b) How many total **yards** did they walk? How many total **feet** did they walk? *Show or explain how you found your answers.*

$$\begin{array}{r}
 88 \\
 92 \\
 112 \\
 156 \\
 64 \\
 + 200 \\
 \hline
 712
 \end{array}$$

712 yards

$$\begin{array}{r}
 712 \\
 \times 3 \\
 \hline
 2136
 \end{array}$$

2136 feet

c) If they walked at a constant rate of four feet per second without stopping, how long did their walk take? *Show or explain how you found your answers.*

Advanced
application of
basic skills.

$$2136 \div 4 = 534 \text{ seconds or } 8.9 \text{ minutes}$$

- 5) Soft drinks come in three sizes at the movie theater: small, medium, and large. The large is twice the size of the medium. The small is $\frac{1}{3}$ the size of the large.

- a) Let **m** represent the size of the medium drink. Write algebraic expressions in terms of **m** to represent the small and large drinks. *Show or explain how you found your answers.*
- b) If the medium drink is 18 ounces, how many ounces will the small drink hold? How many ounces will the large drink hold? *Show or explain how you found your answers.*
- c) The small drink costs \$1.80. The medium drink costs \$2.50. The large drink costs \$4.50. What is the cost per ounce for each size? *Show or explain how you found your answers.*